Training to Care for Limited English Proficient Patients and Provision of Interpreter Services at U.S. Dental School Clinics

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Abstract: Legal protections in the United States mandate that individuals with limited English proficiency (LEP) have equal access to health care. However, LEP populations are at higher risk of poor health. Dental school clinics offer lower cost care by supervised dental students and often provide care for LEP patients. The aims of this study were to survey dental students about their clinical experience with LEP patients, the interpreter resources available at their dental school clinics, and the extent of instruction on these topics. Academic deans at 19 dental schools (30.6% of 62 invited schools) distributed the survey to their students, and the survey was completed by 325 students (4.2% of students at the 19 participating schools). Among the responding students, 44% reported their dental school clinic lacked formal interpreter services, and most of the respondents reported receiving minimal instruction on caring for LEP patients. Only 54% of the responding students reported feeling adequately prepared to manage LEP patients following graduation. These results suggest there is limited access to interpreter services for students while in dental school. A large proportion of these dental students thus reported feeling unprepared to treat LEP patients after graduation.

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Over 61 million Americans speak a language other than English at home, and 25 million of them are considered to have limited English proficiency (LEP).[1] Navigating the complex U.S. health care system is a challenge for most patients, and those with LEP face additional barriers to care due to communication difficulties. As a result, patients with LEP experience poorer health care outcomes at all phases of care delivery, from the primary care setting, to use of emergency services, to hospitalization than proficient English speakers.[2-4] Patients with LEP face longer hospital stays, increased risk of preventable complications such as infections or falls, and increased emergency department utilization for non-emergent health care needs.[5-8] Children with LEP parents also have reduced access to care and higher risk of complications at all stages of life, from birth through adolescence.[3,9,10] As with other aspects of health, individuals with LEP also suffer from worse oral health outcomes. People with LEP are more likely to be uninsured and not have routine dental checkups.[11] Families in which parents have LEP are less likely to visit a dentist or receive preventive dental services.[3,12]

In spite of these disparities, the Joint Commission, the major accrediting body for hospitals and health care systems, mandates that all LEP patients have access to interpreter services when seeking medical care.[13] This requirement has its origin in the Civil Rights Act of 1964, which made it illegal for federally funded institutions to restrict access to services for LEP individuals. Most recently, Executive Order 13166, passed in 2000 and amended in 2003, reiterates the right to access regardless of language, although, troublingly, that order acknowledges that accommodations for LEP individuals may vary based on the size of an institution and lacks specific guidelines for services, making enforcement challenging.[14] As dental treatment is less likely to be delivered in settings accredited by the Joint Commission and more often take place in the solo or small-group practice setting, access for LEP patients is significantly less likely to be enforced in the dental care system.[15,16]

In addition to private practices and community health centers, dental school clinics present another option for access to dental services for LEP patients. Dental school clinics are a distinctive health care setting in which patients receive affordable dental

services from students supervised by licensed dentists. These clinics often attract a greater proportion of patients from underserved populations, including patients with LEP.[17] Trainees who have experience caring for the underserved while in dental school have been found to be more likely to express interest in doing so when they enter practice.[18,19] While the Commission on Dental Accreditation (CODA) requires dental school graduates to demonstrate competence in working with a diverse patient population, no specific requirements regarding patients with LEP or interpreter services exist.[20] Our previous survey of dental school academic deans found inconsistent availability of interpreter services at U.S. dental school clinics and limited resources to train dental students to responsibly treat patients with LEP.[21] The aims of this study were to ask dental students about their clinical experience with LEP patients, the interpreter resources available at their dental school clinics, and the extent of instruction on these topics.

Methods

The study protocol was reviewed and approved as not human subjects research by the Harvard Medical School/Harvard School of Dental Medicine Institutional Review Board (IRB15-2567). For this cross-sectional survey-based study, the sample was comprised of students at U.S. dental schools. A school was considered eligible if it was accredited by CODA.

Contact information was obtained in 2015 from publicly accessible school websites for the 62 CODA-accredited dental schools that had been established for four or more years. Academic deans at United States dental schools were contacted to invite their students to participate in the survey. Solicitation letters were sent to academic deans via email. After they agreed to solicit their students for participation, a second email was sent with a link to the survey for their office to forward to students at their institution. A second solicitation letter was sent three weeks after the initial invitation in an attempt to increase response rate. Responses were received from September 23, 2015, to January 11, 2016.

The survey contained a total of 18 questions, but respondents received between 14 and 18 prompts depending on their responses and the internal logic of the survey. The survey asked respondents to describe their institution's policies and protocols on interpreter use and management of LEP patients in student clinics, as well as the curricula in place at their institution to educate students on interaction with LEP individuals. Respondents were also asked about their intentions to treat LEP patients post-graduation. All surveys were completed anonymously, and no potentially identifying information, including school, was collected.

Following data collection, quantitative statistics assessing the demographics of respondents' institutions were recorded. For questions on which numerical responses between 0 and 100 were reported, range, mean, and standard deviation were calculated using the Stata software package.

Results

Academic deans at 19 dental schools (30.6% of the 62 invited schools) distributed the survey to their students. From these schools, 325 students completed the survey (4.2% of students at the 19 participating schools). Total enrollment at each institution that agreed to disseminate the survey was confirmed on the institution's website or via phone call to the school.

The majority of students completing the survey were in their third or fourth year of dental school (82.4%) (Table 1). The size of each dental school class ranged from fewer than 80 enrolled students to greater than 200. However, smaller class sizes were more commonly represented: the majority of respondents indicated that their institution had fewer than 120 students in each class. All regions of the continental United States were represented, though most respondents were from dental schools in the Midwest (37.2%) or Northeast (28.0%).

Students responding to the survey indicated that the majority of their institutions did not record data on the prevalence of LEP patients treated, with only 8.3% of responding students indicating this information was routinely gathered (Table 2). The students estimated that the prevalence of LEP patients at their dental schools' teaching practices ranged from 0 to 91%, with a mean prevalence of 24.7% (SD 21.9%). The students were prompted to list the three most frequently spoken languages of their own LEP patients. Spanish was the most predominant language, followed by Chinese (any dialect), Arabic, and Portuguese.

The majority of responding students (62.8%) indicated the presence of some formal curricular content for working with LEP patients at their in-

stitution (Table 3). If respondents indicated that no formal instruction or resources were available to them, they were not prompted to answer additional questions about instruction and resources available for their training.

In this study, 65.7% of the students indicated that instruction for treating LEP individuals was directly integrated into their curricula through either lecture or interactive content. Among institutions that offered instruction on managing LEP patients, students at 34.3% of them reported that only written resources were available for students and 37.2% reported that no curricular content pertaining to LEP patients was available (Table 3). The majority (69.6%) of student respondents at institutions with LEP curricula indicated that they were provided with four or fewer hours of instruction on this topic. However, a small proportion of students (3.4%) indicated they receive more than 14 hours of instruction on managing LEP patients during their dental school education.

Among the responding students, 43.7% indicated their dental school clinic lacked formal interpreter services, and 35.4% reported that their institution did not take language into account when assigning LEP patients to student clinicians (Table 4). For students whose institutions did not assign LEP patients to student providers in the same manner as English-speaking patients, the majority were said to attempt to pair the patient with a provider who speaks the same language (56.6%) or if no students speak that language, speaks a similar language (35.2%). The majority of responding students (56.3%) indicated there was some form of interpreter services available on their clinic floor. If no formal interpreter services for the LEP patient's primary language were available, then the student respondents indicated that most often (58.9%) patients brought an ad hoc interpreter they knew personally.

The majority of the student respondents reported believing that LEP patients at their institution received sufficient quality of care and that students were prepared to provide care to LEP patients at their institutions. The respondents indicated a mean agreement of 70.8% on a 0 to 100 visual analog scale (range 0-100%, SD 26.7%) with the statement "LEP patients receive the same quality of care as non-LEP patients in our teaching practices." The respondents indicated a mean agreement of 54.0% (range 0-100%, SD 25.3%) on the same scale with the statement "When you graduate from your institution, you will be adequately prepared to independently manage LEP patients."

Table 1. Year in school of participating students and information on their institutions, by number and percentage of respondents (n=325)

Question	Number (%)
Year in school	
First year	19 (5.8%)
Second year	38 (11.7%)
Third year	148 (45.5%)
Fourth year	120 (36.9%)
How many students are in each class at your institution?	
Fewer than 80	93 (28.6%)
81-120	153 (47.1%)
121-160	49 (8.6%)
161-200	23 (15.1%)
Greater than 200	7 (2.2%)
What region is your school located in?	
Northeast	91 (28.0%)
Midwest	121 (37.2%)
South	42 (12.9%)
Southwest	44 (13.5%)
West	27 (8.3%)

Students were asked about their intentions to treat LEP patients after graduating from their institution. The most common response (43.2%) was "I will not seek out LEP patients, but I will provide care if they come to my clinic" (Table 5). The survey concluded with an opportunity for respondents to provide comments on the topic of LEP patients and access to interpreter services in their student dental clinics.

Discussion

Institutions that receive federal funding are obligated to ensure meaningful access to services for individuals regardless of language.[22] In our previous study, academic deans at U.S. dental schools reported inadequate access to interpreter services at their school clinics and limited training in working with LEP students for dental students[21]—results that are consistent with the results of the current survey of dental students. Federal agencies intentionally allow for fluid interpretation of these guidelines on the part of funding recipients. For example, the Department of Health and Human Services guidelines state that the standard is "designed to be flexible" and that "recipients are required to take reasonable steps" to ensure access for people with LEP.[23] While hospital-affiliated dental clinics must provide access to interpreter services as part of Joint Commission

Table 2. Students' report of their patients with limited English proficiency (LEP) and their languages, by number and percentage of respondents (n=325)

Question	Number (%)
Do you collect LEP data from your teaching practice patients?	
Yes	27 (8.3%)
No	298 (91.7%)
What is your estimation of the percentage of teaching practice patients who are LEP patients?	
Range	0-91%
Average	24.69%
Standard deviation	21.92
Languages listed as top three most common of LEP patients	
Spanish	35 (100.0%)
Chinese	12 (34.3%)
Mandarin	4 (11.4%)
Cantonese	1 (2.9%)
No dialect specified	7 (20.0%)
Russian	6 (17.1%)
Vietnamese	6 (17.1%)
Arabic	5 (14.3%)
Korean	2 (5.7%)
Portuguese	2 (5.7%)
Somali	2 (5.7%)
Creole	1 (2.9%)
French	1 (2.9%)
Hmong	1 (2.9%)
Kurdish	1 (2.9%)
Polish	1 (2.9%)
Sudanese	1 (2.9%)
Ukrainian	1 (2.9%)

accreditation, explicit guidance on interpreter access in the dental setting is sparse.[13] Moreover, most state Medicaid programs do not provide reimbursement for interpreter services, placing the burden of cost on health care providers.[17] For these reasons, even providers who see a high proportion of underserved and LEP patients may be unaware of legal protections available for patients with LEP.[24] It is important to note that, in spite of these varying guidelines, dental schools that do not provide access to interpreter services may be putting themselves at risk of prosecution under Title VI of the 1964 Civil Rights Act.[14]

In addition to raising awareness of federal requirements surrounding linguistic discrimination, another potential body that could ensure access to dental care for LEP patients at dental school clinics is CODA, the accrediting body in dentistry. Graduates from a dental school that is not CODA-accredited are not immediately eligible for licensure in the United States upon graduation. There is no CODA standard that directly requires competence in managing patients with LEP although three standards indirectly address this matter. Standard 1-3 requires a humanistic culture; standard 1-4 requires policies that promote diversity in students, faculty, and staff; and standard 2-16 requires graduates to be competent to work with a diverse patient population in a multicultural work environment.[20] The results of our survey indicate that these standards may not be used to improve quality of care for LEP patients. CODA standards are a living document, with regular revisions to improve the educational experience and safety of patients at dental school clinics. Perhaps officials should consider including a provision to mandate the presence of interpreter services.

Approximately 8% of the U.S. population is LEP, yet students reported that about a quarter of their patients had LEP, a number consistent with previous studies of dental school patient populations.[17,21] The prevalence of LEP patients indicates that this is a major issue to consider when designing curriculum and clinic protocols, yet no formal instruction or resources available on managing patients with LEP was reported by 37.2% of the students in our study. Improved utilization of available interpreter services has been noted after educational interventions as brief as two hours and specific instruction for interpreter use in the dental setting are available.[25,26] Close to 50% of the respondents in our study reported they received fewer than two hours of instructions on managing patients with LEP, and less than 8% received more than ten hours of instruction on this topic. While hours of instruction alone are not the only factor influencing learning, an association has been found between the number of clock hours of training and improved performance, especially for clinical skills.[27]

For those students who reported some instruction on interpreter use, it is valuable to consider the educational modalities utilized. Among those students who were trained in managing patients with LEP, 38.7% reported traditional lectures, and 34.3% reported written content. Dental educators have utilized numerous innovative teaching modalities with proven effectiveness—for example, the flipped classroom, problem-based learning, team-based learning, case-based learning, peer-assisted learning, triple jump oral examinations, and using social media for learning.[28-34] However, 73% of the respondents (149) in our study indicated the two most common methods

Table 3. Students' report of their schools' formal curricula on treatment of patients with limited English proficiency (LEP), by number and percentage of respondents to each question

Question	Number (%)
Is there formal instruction or resources available for dental students (via lectures, videos, reading material, seminars, hands-on practice) in managing LEP patients? (n=325)	
Yes	204 (62.8%)
Formal instruction and resources available	86 (26.5%)
Formal instruction only	17 (5.2%)
Resources available only	101 (31.1%)
No	121 (37.2%)
What is the primary method of instruction your institution uses to educate students on management of LEP patients? (n=204)	
Written content: provide materials and other resources to peruse	70 (34.3%)
Lectures: provide educational information in class	79 (38.7%)
Hands-on: provide opportunities to practice interaction and receive feedback	55 (27.0%)
About how many hours of formal instruction or training in managing LEP patients will students have had by the time they graduate from your institution? (n=204)	
Less than 2 hours	98 (48.0%)
2-4 hours	44 (21.6%)
5-6 hours	18 (8.8%)
7-8 hours	20 (9.8%)
9-10 hours	8 (3.9%)
11-12 hours	5 (2.5%)
13-14 hours	4 (2.0%)
More than 14 hours	7 (3.4%)

Table 4. Students' report of protocols for management of patients with limited English proficiency (LEP) in their dental school clinics by number and percentage of respondents to each question

Question	Number (%)
Which statement best describes how LEP patients are assigned to student providers? (n=325)	
They are assigned through the same mechanisms as English-speaking patients.	115 (35.4%)
We pair LEP patients with students who have indicated they speak the patient's primary language.	184 (56.6%)
Other	26 (8.0%)
If no student providers speak that primary language, how are LEP patients assigned? (n=210)	
We assign the patient randomly.	105 (50.0%)
We assign the patient to a student provider who can speak a similar language.	74 (35.2%)
Other	31 (14.8%)
Which statement best describes the interpreter services available on the clinic floor? (n=325)	
We have formally trained interpreters employed by our institution whom student providers can request for appointments.	47 (14.5%)
We subscribe to interpreter services provided via phone or internet via programs like IPOP that are available in the clinic.	115 (35.4%)
We have formal interpreter services available (in-person or via phone or internet) for some but not all languages spoken by patients (please specify).	21 (6.5%)
We do not have formal interpreter services available.	142 (43.7%)
If the student provider and patient do not have access to formal interpreter services on the clinic floor for the patient's primary language (n=163)	
Patients may bring an ad hoc interpreter they know personally (family member or friend).	96 (58.9%)
Student providers and patients may utilize ad hoc interpreters affiliated with the school (staff, other students, faculty).	49 (30.0%)
We refer the patient to an external site that has formal interpreter services for his/her needs.	6 (3.7%)
Other	12 (7.4%)

Table 5. Students' intention to treat patients with limited English proficiency (LEP) in the future by number and percentage of respondents (n=324)

Response	Number (%)
Please select the response that best matches your intention to treat LEP patients.	
I will actively seek out opportunities to provide care for LEP patients.	78 (24.1%)
I will not seek out LEP patients, but I will provide care if they come to my clinic.	140 (43.2%)
I plan to not provide care for LEP patients and would instead refer them to another provider.	10 (3.1%)
I would treat them in my practice using a phone or in-person interpreter.	53 (16.4%)
I would treat them in my practice if they brought a family member or they speak a language I also speak.	43 (13.3%)

Note: One student did not respond to this question.

of training about managing LEP patients were written content and traditional lectures. Recent trends in dental education could be harnessed to develop educational interventions for training about patients with LEP, especially given that they have been successfully applied to comparable clinical skills such as cultural competence.[35]

In our previous study, the responding academic deans indicated an average 88.8% mean agreement that LEP patients received care equal in quality to non-LEP patients at their clinics.[21] However, the student respondents in this survey were only 70.8% in agreement that both groups received equal quality care. Additionally, the academic deans indicated an average 61.9% mean agreement that students would be adequately prepared to independently manage LEP patients upon graduation, while students were only 54.0% in agreement. This inconsistency between the administrators responsible for curriculum development and the students directly responsible for patient care may reflect present but ineffective education on management of LEP patients in dental schools. Interestingly, the range of responses was much broader among the students, who reported mean agreements ranging from 0 to 100. This range suggests that the students' experiences with LEP patients vary substantially based on institutions or students' particular patient mix.

In terms of student assignment of patients with LEP, 35.4% of the respondents did not report a difference in the way they were distributed compared to non-LEP patients. However, 56.6% reported that a student who can speak the language of the patient with LEP is preferentially selected to care for that patient. We wish to examine two potential implications of this system. First, language concordance between patient and provider has been found to improve health outcomes.[36,37] The student body in U.S. dental schools has become somewhat more racially and ethnically diverse over the past decades,[38] and numerous respondents to our survey indicated they were fluent speakers of a language other than English. However, studies of medical providers have found that trainees may overestimate their language abilities and that tests of proficiency decrease self-rated ability to care for LEP patients.[39,40] Inaccurate interpretation is also correlated with higher complication rates, making the use of untested language-concordant trainees potentially risky to patient well-being.[41] Schools utilizing this form of patient assignment should consider implementing language proficiency testing to ensure trainee readiness to treat LEP patients.

An additional consideration is that this system results in missed opportunities for students who do not speak a language other than English (or who may speak a language other than English that is not represented in the clinics' patient population). Appropriately treating a patient with the assistance of an interpreter is a learnable skill that requires practice to master, and even trainees who speak a language other than English should be encouraged to acquire it as they may still treat language-discordant patients.[42] Patients have rated professionally interpreted medical encounters highly since professional interpreters serve as cultural brokers, providing cultural context in addition to translating spoken words.[4,7] If all, rather than merely language-concordant, students could work with LEP patients, students could learn to collaborate with an interpreter and gain confidence in managing a patient with LEP as they would in practice. One study found that this kind of confidence transfer occurred in other fields of dental experience and influenced future practice goals.[43] Such a confidence transfer may also occur if students have experiences using interpreter services to treat patients with LEP in dental school.

There were several limitations in this study. Given the two-step dissemination process of our electronic survey, the response rate was low, comprising only 1.4% of students currently enrolled in U.S. dental schools.[44] However, the 29 academic deans who agreed to participate represented 7,624 students (4.3% of all U.S. dental students). It should be noted that the academic deans may have used their discretion to withhold the survey from students in their schools who were not in clinical training. For example, if first-year dental students have not started their clinical experience, those academic deans may have decided not to send the survey to them. If the pool of potential respondents was thus limited, the overall response rate may have been a little better, though we have no way to interpret the difference. While some findings suggest that surveys with low response rates may be as accurate as surveys with larger response rates, additional and more rigorous assessment of the status of training on patients with LEP in dental education is critical.[45,46] This study should only be considered as a pilot to guide future research since another limitation is that the small response rate could lead to bias in which only respondents who had had experiences with LEP patients or who held strong opinions about working with LEP patients responded. Different dental schools may have higher proportions of students who speak a language other than English as well. Additionally, academic deans at schools that are more mission-driven may have been more likely to consent to disseminate the survey to their student body. No demographic information was collected about students' patient populations; the estimates presented by students are not necessarily accurate depictions of the overall population who receive care at dental school clinics.

It is distressing to note that some respondents to our survey did not intend to provide treatment for LEP patients in their future practice: 3.1% of the respondents indicated they would not treat LEP patients at all, and 13.3% said they would only if the patient brought a family member or spoke the same language as the dentist. In a free-response space at the end of our survey, several students wrote unprompted comments indicating they did not believe it was their responsibility to provide care for LEP patients. One student noted, "I understand medical terms are hard to learn for immigrants, but a basic understanding of the English language should be present if they are legal residents of the U.S." Another wrote, "English is the language of commerce, science, and health technology in the United States. I cannot communicate effectively the intricacies of dental treatment with someone who does not understand English." Another noted, "I don't feel it is my responsibility to provide translating services to patients who can't speak English." While these responses may be outliers, they still represent comments of current students who will be future dentists. We believe such comments represent a failure of the dental education system, as they indicate that these respondents were unaware of the legal obligations they face to LEP patients, as well as a lack of cultural competence. Previous studies have found that dental students' altruism declines over the course of dental training.[47,48] In addition to other efforts, appropriate training in working with LEP patients may play a role in improving these trends.

The United States is becoming increasingly linguistically diverse, yet disparities in health care access and health outcomes persist for patients with LEP.[8,37] Among these are disparities in oral health.[49] Oral health care providers may be less likely than those in larger health care systems to offer interpreter services to their patients, and there is limited enforcement of federal protections for LEP populations. To achieve oral health equity, future dental professionals must be adequately prepared to treat patients with LEP.

To do so, dental schools will have to be proactive. Dental students may gain competence working with interpreters by participating in health care settings outside the dental school clinic—for example, in hospitals or community health centers who must subscribe to Joint Commission standards and thus have interpreter services available.[13] Dental schools should consider requiring students who speak languages other than English to pass certification exams prior to treating LEP patients and to provide instruction in dental terminology. Interpreter services remain costly, up to hundreds of dollars a year per LEP patient, and are often not reimbursed by Medicaid or other payors.[17,50] Dental schools may partner with health systems or community organizations who serve LEP populations to obtain reduced-cost interpreter services. Technological advancements, such as using interpreter-phone-on-a-pole or televisual conferencing, may also help make interpreter services more affordable within dental school clinics. In spite of this cost burden, however, dental schools should be mindful that while not thoroughly enforced, without

interpreter services, they are vulnerable to civil rights prosecution.

Conclusion

Our study indicated that some current U.S. dental students find interpreter services to be lacking in the settings in which they train and formal supporting curricula to be limited. A large proportion of these students felt inadequately trained to treat LEP patients post-graduation. There is no current CODA standard related to learning how to manage patients with LEP or how to collaborate with an interpreter. Dental schools must take responsibility for their current LEP patients and prepare their students to work in the increasingly diverse U.S. environment. Failure to do so may worsen oral health outcomes for patients with LEP—both current dental school clinics patients and the future patients of their graduates.

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